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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/212,657	12/15/98	MOON D	8733D-6990

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EXAMINER
VU,Q

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 11/03/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/212,657	MOON, DAE-GYU	
	Examiner	Art Unit	
	Quynh-Nhu H. Vu	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☒ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☒ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 9, the phrase "formed using the region as the substrate" is not understood. The remaining claims are also rejected since they depend on the indefinite claims. In the below rejections, the above phrase is interpreted as "formed at the first (second, third) region of the substrate".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being unpatentable by Applicant 's Prior Art.

Applicant 's Prior Art disclose in Fig. 1C and 2 a system-on-panel typed liquid crystal display comprising: a substrate (100) including first, second and third region; a pixel array formed at the first region of the substrate; a driver (data driving circuit and gate driving circuit) formed at the second region of the substrate; and a control unit formed at the third region of the substrate. The switching devices formed of single

crystal silicon are inherently included in the control unit. See specification, page 5, last paragraph; page 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-6, 8 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant 's Prior Art Figs. 1C and 2 in view of Funada et al. [PN 5,696,388].

Applicant's Prior Art Figs. 1C and 2, as applied in prior rejection, disclose all claimed subject matter except the pixel array has an active layer formed of polycrystalline silicon, single crystalline silicon or amorphous silicon, and the driver has an active layer formed of amorphous silicon or single crystalline silicon.

Funada et al. disclose in column 1, lines 17- 68 that the thin film transistors (TFTs) which include the pixel array and driver are formed of amorphous silicon, single crystalline silicon, or polycrystalline silicon. Applicant's Prior Art Fig. 1B disclose that it is known to employ a driver having an active layer formed of polycrystalline silicon (specification, page 3, last paragraph; page 4, first paragraph).

Thus, it would have been obvious at the time the invention was made to a person having ordinary skill in the art in view of Funada et al. to employ amorphous silicon, single crystal silicon and polycrystalline for the following reasons. Amorphous silicon is

most generally used because it has low manufacturing temperature and can be relatively readily manufacturing by a gas phase method so as to being wealthy in productivity. However, the single crystalline silicon is has good electrical conductivity, as compared to amorphous silicon and polycrystalline silicon. Polycrystalline silicon is easily fabricated on glass substrate and has good electrical conductivity, as compared to amorphous silicon.

Conclusion

Any inquiry concerning this communication should be directed to Quynh-Nhu H. Vu at telephone number 703-305-0850.

QNVU
8/24/00

William L Sikes

William L. Sikes
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